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(54) Title: METHODS AND COMPOSITION FOR ORAL VACCINATION

(57) Abstract: The present invention encompasses methods and compositions both for providing protection against disease in an animal and for inducing increased intake of an orally administered vaccine by an animal. The methods of the invention are directed to admixing a bacterial or viral antigen with a water soluble palatable flavorant, further admixing the antigen and flavorant mixture with a water soluble vehicle for oral administration of the vaccine to an animal in order to provide protection against disease associated with infection by the admixed antigen and to induce the increased intake of the vaccine with the flavorant. The present invention thus encompasses methods and compositions for the oral vaccination of healthy animals through drinking water or syrups as an aid in the prevention of disease. The admixing of the palatable flavorant provides for a vaccine formulation with a desirable taste in order to promote self-administration of the vaccine formulation and/or to prevent rejection of the formulation when administered by an animal handler.

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According to International Patent Classification (IPC) or to both national classification and IPC

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

BIOSIS, EPO-Internal, PAJ, WPI Data, EMBASE

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 882 649 A (PANG G T ET AL) 16 March 1999 (1999-03-16) column 3, line 28 -column 4, line 17 ---	1-7, 12-17, 21-24,26
A	US 5 985 336 A (IVEY F.J. ET AL) 16 November 1999 (1999-11-16) the whole document ---	1-26
A	GB 1 102 676 A (HART H.W.) 7 February 1968 (1968-02-07) the whole document ---	1-26
A	US 5 884 583 A (JOHNSTON J.H. ET AL.) 23 March 1999 (1999-03-23) the whole document ---	1-26

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☒ Further documents are listed in the continuation of box C.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 99 59626 A (MKB INVESTMENTS LIMITED PARTNERSHIP) 25 November 1999 (1999-11-25) the whole document	1-26
A	US 6 010 720 A (DERRIEU G. ET AL) 4 January 2000 (2000-01-04) the whole document	1-26

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PC1/US 01/20155

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5882649	A	16-03-1999	AT 162402 T	15-02-1998
			AU 646257 B2	17-02-1994
			AU 7753191 A	11-11-1991
			WO 9116073 A1	31-10-1991
			CA 2080477 A1	25-10-1991
			DE 69128782 D1	26-02-1998
			DE 69128782 T2	10-09-1998
			DK 528859 T3	14-09-1998
			EP 0528859 A1	03-03-1993
			ES 2113882 T3	16-05-1998
			GR 3026569 T3	31-07-1998
			HK 1004060 A1	13-11-1998
			KR 186783 B1	01-05-1999
			SG 46225 A1	20-02-1998
			US 5643577 A	01-07-1997
US 5985336	A	16-11-1999	US 5928686 A	27-07-1999
			AU 723485 B2	31-08-2000
			AU 6153996 A	30-12-1996
			CA 2222515 A1	19-12-1996
			CN 1191469 A	26-08-1998
			CZ 9703821 A3	15-07-1998
			EP 0831718 A1	01-04-1998
			HU 9900850 A2	28-07-1999
			JP 11506617 T	15-06-1999
			NO 975691 A	05-12-1997
			NZ 310705 A	30-08-1999
			PL 323720 A1	14-04-1998
			SI 9620072 A	31-10-1998
			SK 165097 A3	09-09-1998
			TR 9701559 T1	21-03-1998
			WO 9639862 A1	19-12-1996
			US 6329001 B1	11-12-2001
			US 6210718 B1	03-04-2001
			US 5976580 A	02-11-1999
			ZA 9604883 A	07-01-1997
GB 1102676	A	07-02-1968	US 3353518 A	21-11-1967
			US 3405686 A	15-10-1968
			DE 1550312 A1	19-11-1970
US 5884583	A	23-03-1999	AU 6588098 A	22-10-1998
			BR 9808096 A	08-03-2000
			EP 1011318 A2	28-06-2000
			JP 2001521418 T	06-11-2001
			WO 9843475 A2	08-10-1998
WO 9959626	A	25-11-1999	AU 4078699 A	06-12-1999
			BR 9910438 A	02-01-2001
			EP 1076567 A1	21-02-2001
			WO 9959626 A1	25-11-1999
US 6010720	A	04-01-2000	FR 2710500 A1	07-04-1995
			AT 167984 T	15-07-1998
			AU 680693 B2	07-08-1997
			AU 7786494 A	18-04-1995
			DE 69411579 D1	13-08-1998
			DE 69411579 T2	21-01-1999

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PC1/US 01/20155

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6010720	A	DE 725570 T1	15-05-1997
		EP 0725570 A1	14-08-1996
		ES 2095817 T1	01-03-1997
		WO 9508931 A1	06-04-1995
		JP 9503914 T	22-04-1997
		NZ 273973 A	27-07-1997